

Rhodora

JOURNAL OF THE
NEW ENGLAND BOTANICAL CLUB.

Conducted and published for the Club, by

BENJAMIN LINCOLN ROBINSON Editor-in-chief.

FRANK SHIPLEY COLLINS

MERRITT LYNDON FERNALD

HOLLIS WEBSTER

} Associate Editors.

WILLIAM PENN RICH

EDWARD LOTHROP RAND

} Publication Committee.

Vol. 8.

November, 1906.

No. 95.

CONTENTS:

| | |
|--|-----|
| Notes on Grasses. <i>A. S. Hitchcock</i> | 205 |
| Some Maine Rubi,— III. <i>W. H. Blanchard</i> | 212 |
| Additions to the Flora of Rhode Island <i>M. L. Fernald</i> | 219 |
| Records of the Connecticut Botanical Society, — II <i>E. B. Harger</i> | 222 |
| Regeneration in Leaf of <i>Aristolochia</i> . <i>R. G. Leavitt</i> | 223 |
| Potamogeton spathaeformis a probable Hybrid. <i>M. L. Fernald</i> | 224 |

Boston, Mass.

740 Exchange Building.



Providence, R. I.

Preston and Rounds Co.

RHODORA.—A monthly journal of botany, devoted primarily to the flora of New England. Price \$1.00 per year (\$1.25 to all foreign countries except Canada); single copies 15 cents. Volume 1, \$1.50. All remittances by check or draft, except on Boston or New York, must include ten cents additional for cost of collection. Notes and short scientific papers, relating directly or indirectly to the plants of the northeastern states, will be gladly received and published to the extent that the limited space of the journal permits. Forms will be closed five weeks in advance of publication. Authors (of more than one page of print) will receive 25 copies of the issue in which their contributions appear. Extracted reprints, if ordered in advance, will be furnished at cost.

Address manuscripts and proofs to

B. L. ROBINSON, Clement Circle, Cambridge, Mass.

Subscriptions, advertisements, and business communications to

W. P. RICH, 300 Massachusetts Avenue, Boston, Mass.

Single copies may be had from

E. L. RAND, Corresponding Sec'y N. E. Botanical Club,

740 Exchange Building, Boston, Mass.

Entered at Boston, Mass., Post office as Second Class Mail Matter

FIELD-BOOK OF WILD BIRDS AND THEIR MUSIC.

By F. SCHUYLER MATHEWS; an entirely new presentation of the woodland musician with valuable and scientific transcriptions of his songs. Profusely illustrated in color and black and white drawings. G. P. PUTNAM'S SONS, N. Y. \$2.00 by mail, or Address F. S. MATHEWS, 17 Frost Street, Cambridge, Mass.

NOTICE

Part III of **Mosses with Hand-lens and Microscope** now ready. Price \$1.00. Shall we send you a copy?

After Sept. 1, 1906, the price of this work will be advanced to \$1.25 per part to all who subscribe *after that date*.

Mosses with a Hand-lens, second edition, 8vo., 224 pp., 39 full page plates and 151 cuts in the text; describes 169 species of Mosses and 54 species of Hepatics, \$1.75. Sample pages on application.

A. J. GROUT, 360 LENOX ROAD, BROOKLYN, N. Y.

HARDY NATIVE AMERICAN PLANTS

and Carolina Mountain Flowers. Many new rare and local varieties.

HARLAN P. KELSEY, Landscape Architect,

Prop. Highlands Nursery,
Kawana, North Carolina.

Catalogues.

Tremont Building, Boston.

Consultation and plans for improvement of estates, private and public grounds, suburban properties and resorts.

GROUT

MOSSSES WITH A HAND-LENS. 2d Ed., 224 pp., \$1.75 net, post-paid.

MOSSSES WITH A HAND-LENS AND MICROSCOPE. Part I. 86 pages. \$1.00 net, post-paid. Sample pages on application.

O. T. LOUIS, 59 FIFTH AVENUE, NEW YORK CITY.

Rhodora

JOURNAL OF

THE NEW ENGLAND BOTANICAL CLUB

Vol. 8.

November, 1906.

No. 95.

NOTES ON GRASSES.

A. S. HITCHCOCK.

DURING the study of the grasses of the northeastern United States it has been found necessary to describe a few new species and varieties, and to change the names of other forms to agree with the recent International Rules of Botanical Nomenclature. Some new combinations are due to changes in the rank of groups, investigation having shown that forms supposed to be varieties must be recognized as species, or the reverse. The new names and descriptions are given below.

Andropogon scoparius var. **littoralis** (Nash), comb. nov.

A. littoralis Nash, 1901. Britt. Man. 69.

Sand dunes along the coast, N. Y. and southward.

Paspalum psammophilum Nash MSS.

P. prostratum Nash, 1901. Britt. Man. 74, not Scribn. & Merr. Jan. 1901; earlier than Britton's Manual.

Sandy soil, So. N. Y. to Del.

Paspalum laeve var. **australe** Nash MSS.

P. australe Nash, 1901. Britt. Man. 1039.

Va. to Fla. and Miss.

Axonopus furcatus (Flügge), comb. nov.

Paspalus furcatus Flügge 1810. Mon. Pasp. 114.

Paspalum Elliottii Wats. 1890. Gray, Man. Ed. 6, 629.

Panicum gravius Hitchc. & Chase, sp. nov.

Culms in large tufts, slender, 50–80 cm. high, erect or spreading at the summit, sheaths glabrous except a puberulent ring at the summit, the lower usually softly pubescent; ligule a ring of hairs 0.3 mm. long; blades spreading, 6–10 cm. long, 6–10 mm. wide, (the lower shorter), acuminate, rounded at the base, glabrous, the lower rarely

puberulent; panicle long, exserted, 6–11 cm. long, as wide or wider, the slender flexuous branches fascicled, the lower spreading or drooping at maturity, spikelet-bearing at the ends; spikelets oval, 2 mm. long, glabrous, first glume $\frac{1}{4}$ – $\frac{1}{3}$ as long as the spikelet, acute, 1-nerved, second glume and sterile lemma 5–7 nerved, equal, covering the fruit at maturity; fruit elliptic, 1×1.8 mm., obscurely apiculate. Autumnal state diffusely branched, forming very large top-heavy reclining bunches, the slender branches recurved, the numerous flat blades horizontally spreading.

In the simple state this species resembles large specimens of *P. dichotomum* L., to which it is most nearly allied, but it is distinguished in that state by wider blades, larger panicle with more drooping branches and by equal second glume and sterile lemma (rather more strongly nerved than in *P. dichotomum*), which cover the fruit at maturity. In *P. dichotomum* the second glume is shorter and exposes the fruit. In autumnal state *P. gravius* is readily distinguished by the habit.

Rocky or dry woods and hillsides, Connecticut to Michigan, south to Georgia, Mississippi and Arkansas.

Type Chase 3620; forming top-heavy tufts, in sandy, rather dry woods, on the old Commons farm, between Centreville and Mt. Cuba, Delaware, July 30, 1906; collected by Agnes Chase. Deposited in National Herbarium.

Distribution: CONNECTICUT: Meriden, Bissell 5579. MICHIGAN: Port Huron, Dodge in 1899; Michigan Agricultural College, Wheeler in 1900. PENNSYLVANIA: Easton, Porter in 1895. DELAWARE: Mt. Cuba, Commons 296, Chase 3620. MARYLAND: Riverdale, Chase 3643. DISTRICT OF COLUMBIA: Washington, Hitchcock 18 and 257. VIRGINIA: Marion, Small in 1892. NORTH CAROLINA: Biltmore, Biltmore Herb. 800a. GEORGIA: Stone Mountain, Hitchcock 183. MISSOURI: Monteer, Bush 2877. ARKANSAS: Fulton, Bush 2532. MISSISSIPPI: Saratoga, Tracy 8403.

***Panicum praecocius* Hitchc. & Chase, sp. nov.**

Culms tufted, 15 to 25 cm. high in the simple state, early branching and elongating, sometimes to 30–45 cm., at first erect, soon becoming geniculate and spreading, very slender, wiry, abundantly pilose with weak spreading hairs 3–4 mm. long; sheaths, even the lowest, much shorter than the very long internodes, those of the branches usually but 1–2 cm. long, pilose like the culm, more prominently papillose; blades rather firm, erect or ascending, 5–8 cm. long, 4–6 mm. wide, those of the branches as large as the primary leaves, linear-oblong, often somewhat involute toward the acuminate apex, scarcely nar-

rowed toward the base, long-pilose on both surfaces, the hairs of the upper surface 4–5 mm. long, erect from the plane of the blade; ligule 3–4 mm. long; primary panicles at first usually overtopped by the upper leaf, but at or past maturity exerted, ovate or rhombic in outline, 4–6 cm. long, nearly as wide, loosely flowered, the axis pilose, branches flexuous, spreading or ascending; the secondary panicles smaller, numerous, overtopped by the leaves; spikelets 1×1.8 – 1.9 mm., obovate and turgid at maturity, obtuse, pilose with weak spreading hairs, first glume $\frac{1}{3}$ – $\frac{1}{2}$ the length of the spikelet, triangular, 1-nerved; second and third subequal, 7-nerved, the second slightly shorter than the fruit at maturity; fruit 1×1.6 mm., broad-elliptic. Winter leaves lanceolate, long pilose.

This species scarcely has a simple state, the branches appearing often before the first panicle is expanded. Distinguished from *P. lanuginosum* by the early branching, the usually shorter culms, the firmer, narrow, long-pilose blades, the smaller, fewer-flowered panicles, and more turgid, longer-pilose spikelets.

Dry prairies and clearings, Michigan to Oklahoma and Texas.

Type *V. H. Chase* 649; dry bank, near Wady Petra, Stark County, Illinois, June 30, 1900, collected by Virginus H. Chase.

Distribution: MICHIGAN: Michigan Agricultural College, *Wheeler* 18 in 1900. WISCONSIN: Lauderdale, *R. Bebb* 1000. ILLINOIS: Joliet, *Skeels* 252; Wady Petra, *V. H. Chase*, 472 and 649. MISSOURI: Howell County, *Bush* 54; Monteer, *Bush* 743 and 748. KANSAS: Manhattan, *Kellerman* 20; *Carleton* in 1892. OKLAHOMA TERRITORY: Stillwater, *Hitchcock* in 1903. TEXAS: Waller County, *Thurrow* 5 in 1898.

***Panicum lanuginosum* var. *siccanum* Hitchc. & Chase, var. nov.**

Plants smaller than typical *P. lanuginosum*, of similar habit, the culms appressed-pilose, the sheaths less stiffly pilose than in the species, blades usually somewhat firmer, the upper surface glabrous or with a few scattered long hairs, mostly near the base, lower surface pubescent; ligule shorter (1 mm. long); panicle more open, fewer-flowered, usually smaller; spikelets 1×1.7 mm., more rounded and turgid than those of the species, the pubescence shorter. Much like smoother forms of the species and distinguished only by the characters given.

Dry sand, Massachusetts to North Carolina, west to Kansas.

Type *Chase* 1602, Dry, hot sand of sandstone cliff, Starved Rock, Ill.

Distribution: MASSACHUSETTS: West Quincy, *Churchill* in 1891; Wellesley, *Smith* 735. CONNECTICUT: Montville, *Graves* 328; Lyme,

Graves 329. ONTARIO: Gault, *Herriot 61*. INDIANA: Miller, *Chase 1552*. WISCONSIN: Trempleau, *Pammel* in 1887. ILLINOIS: Starved Rock, *Chase 1602, 1603 and 1604*. KANSAS: Manhattan, *Kellerman* in 1888. PENNSYLVANIA: Germantown, *Stone 13*. DISTRICT OF COLUMBIA: Zoological Park, *Pollard 523*. NORTH CAROLINA: Biltmore, *Biltmore Herbarium 698b*.

***Panicum lanuginosum* var. *huachucae* (Ashe), comb. nov.**

P. huachucae Ashe 1898. Journ. Elisha Mitch. Soc. **15**: 51.

Me. to Minn. and southward.

***Panicum oricola* Hitchc. & Chase, sp. nov.**

Plants grayish, often purplish; culms densely tufted, 10–30 cm. long, spreading, soon becoming branched and prostrate, densely appressed or ascending pilose, the hairs on the nodes spreading; sheaths usually more than half the length of the internodes, overlapping on the branches appressed-pilose; blades firm, erect or ascending, 2–5 cm. long, 2–4 mm. wide, broadest near the base, acuminate; upper surface pilose with hairs 3–5 mm. long, sparse on the later leaves; lower surface appressed-pubescent mixed with longer hairs; ligule a dense ring of hairs 1–1.5 mm. long; primary panicle short exserted, or rarely long-exserted early in the season, ovate in outline, 1.8–3 cm. long, rarely longer, 1–2 cm. wide, rather densely flowered, the axis appressed-pubescent, branches fascicled, flexuous, ascending or spreading; spikelets 1×1.5 mm. broadly obovate, obtuse, pubescent with short spreading hairs, first glume $\frac{1}{3}$ to $\frac{1}{2}$ the length of the spikelet, abruptly pointed, strongly 1-nerved, second and third equal and just equaling the fruit at maturity, obtuse, 7–9 nerved; fruit 0.9×1.3 mm., broadly elliptic, very turgid, obscurely pointed. In autumnal state the plants are prostrate, forming mats, with short fascicled branches at all the nodes; leaves and panicles not greatly reduced, the latter overtopped by the leaves, which are less pilose than are the earlier ones; winter leaves lanceolate, sparsely pilose above.

Distinguished by the decumbent or prostrate habit, appressed-pilose culms and sheaths, and the small panicles of rounded spikelets, large in proportion to the size of the panicle.

Sand barrens along the coast, Massachusetts to Virginia.

Type *Hitchcock 47* in National Herbarium. Prostrate clumps on bare sand on low mounds between marsh and sand dune. Lewes, Del. June 18, 1905, collected by A. S. Hitchcock.

Distribution: MASSACHUSETTS: Nantucket, *Hitchcock* in 1902. NEW YORK: Long Island, *Young* in 1871. NEW JERSEY: Absecum, *Commons 45*; The Plains, *Stone* in 1901. DELAWARE: Lewes, *Hitchcock 47*; Rehoboth, *Commons 59*. VIRGINIA: Cape Henry, *Hitchcock 64*; *Chase 2339*.

***Panicum unciphyllum* var. *thinium* Hitchc. & Chase, var. nov.**

Differs from *P. unciphyllum* as follows: Culms shorter, not over 30 cm. high, in larger tufts, pubescence denser and longer; early becoming profusely branched and widely spreading, the small erect blades with scattered long stiff hairs on the upper surface; spikelets slightly smaller, 1.3–1.4 mm. long, very turgid, obtuse.

Dry sands, New Jersey.

Type *Chase 3577* in National Herbarium. In mats, sandy, open ground, Tom's River, N. J. July 28, 1906; collected by Agnes Chase.

Distribution: Atsion, *Chase 3562*; Tom's River, *3576* and *3577*; Forked River, *3581*.

This form seems to be included in the description of *P. psammophilum* Nash (Bull. Torr. Bot. Cl. **26**: 576. Nov. 1899, not Welw. July, 1899) but the type, *Clute 175* in N. Y. B. G. herbarium, is *P. unciphyllum* Trin. (*P. columbianum* Scribn.)

***P. patulum* (Scribn. & Merr.), comb. nov.**

P. Nashianum patulum Scribn. & Merr. 1900. U. S. D. A. Div. Agrost. Circ. **27**: 9.

S. E. Va. to Fla., near the coast.

***Panicum aculeatum* Hitchc. & Chase, sp. nov.**

In very large clumps, culms slender, 0.7–1 m. high, ascending, scabrous, harshly pubescent below; sheaths papillose-hispid with stiff sharp-pointed hairs, a puberulent ring at the summit, uppermost usually glabrous; ligule minute, membranaceous, ciliate; blades firm, stiffly ascending or spreading, 12–20 cm. long, linear-lanceolate, acuminate, involute-pointed, very scabrous on the upper surface and toward the apex beneath, paler on the under surface; panicle rhombic in outline, 8–12 cm. long, about as wide, few-flowered, the slender, flexuous, fascicled branches ascending or spreading, naked at the base, scabrous, sometimes with a few viscid spots; spikelets 3 mm. long, elliptical, minutely pubescent, first glume $\frac{1}{4}$ to $\frac{1}{3}$ as long as the spikelet, 1-nerved, acute, second glume and sterile lemma 9–11 nerved, abruptly acute, slightly exceeding the fruit; fruit elliptic, 1.3×2.7 mm., minutely umbonate. Autumnal state, branching from the middle nodes, the branches more or less divaricate, not much crowded.

Allied to *P. scabriusculum* Ell.; panicle smaller, more open, fewer-flowered, axis and branches scarcely viscid, spikelets larger, the glumes only slightly exceeding the fruit.

Type *Chase 2520* in National Herbarium. In large clump by small slough, border of woods, Takoma Park, D. C., July 27, 1904; collected by Agnes Chase.

Distribution: DISTRICT OF COLUMBIA: Takoma Park, *Chase 2520*;

Hitchcock & Chase 94; *House* 1041. NORTH CAROLINA: Lake Mattamuskeet, *Chase* 3210.

The name refers to the aculeate hairs on the lower sheaths.

Setaria imberbis* var. *perennis (Hall), comb. nov.

S. perennis Hall. 1893. Trans. Kan. Acad. Sci. **13**: 102.

Chaetochloa versicolor Bickn.

Brackish marshes along the coast, Ct. to Fla. and in saline soil, Kan. and Ind. Terr.

S. viridis* var. *brevisetata (Doell.), comb. nov.

Panicum viride brevisetum Doell, 1857. Bad. Fl. **1**: 234.

A form with bristles scarcely longer than the spikelets; Maine, *Fernald*.

Zizania aquatica* var. *angustifolia, var. nov.

Culms about 1 m. high, leaves narrower than in the species (less than 1 cm. wide), pistillate portion of panicle appressed.—Me. to Minn. and northw. Type from Belgrade, Me., *Scribner*, Aug. 1895.

Oryzopsis racemosa (J. E. Smith) Ricker MSS. comb. nov.

Milium racemosum J. E. Smith, 1813. Rees, Encycl. **23**: 15.

Oryzopsis melanocarpum Muhlb. 1817. Gram. **79**.

Rocky woods, Ont. and Vt. to Minn. southw. to Del. and Ia.

Calamagrostis Pickeringii* var. *lacustris (Kearney), comb. nov.

C. brevisetata lacustris Kearney, 1898. U. S. D. A. Div. Agrost. Bul. **11**: 25.

Moist ground, Mts. of N. Eng. and along the Great Lakes to Minn.

Spartina patens* var. *junceae (Michx.), comb. nov.

Trachynotia juncea Michx. 1803. Fl. Bor. Am. **1**: 64.

Spartina juncea Willd. 1809. Enum. **81**.

Salt marshes and sandy beaches along the coast, N. H. to Fla. and Tex.

Spartina patens* var. *caespitosa (A. A. Eaton), comb. nov.

S. caespitosa A. A. Eaton, 1898. Bul. Torr. Bot. Cl. **25**: 338.

Borders of brackish marshes, N. H. and Mass.

Ctenium aromaticum (Walt.), comb. nov.

Aegilops aromatica Walt. 788. Fl. Car. **225**.

Ctenium americanum Spreng. 1825. Syst. **1**: 274.

Wet pine barrens, Va. and southw.

Tridens flava (L.), comb. nov.

Poa flava L. 1753. Sp. Pl. **68**.

Triodea seslerioides (Michx.) Benth. 1883. Vasey, Cat. Grass. U. S. **35**.

Triodea cuprea Jacq. 1813. Eclog. Gram. 21.

Dry or sandy fields, Ct. to Mo. and southw.

Melica striata (Michx.), comb. nov.

Avena striata Michx. 1803. Fl. Bor. Am. 1: 73.

Rocky wooded hills, Gaspé to Pa., Minn., and westw.

Glyceria Torreyana (Spreng.), comb. nov.

Poa Torreyana Spreng. 1821. N. Entd. 2: 104.

Glyceria elongata (Torr.) Trin. 1836. Gram. Suppl. 58.

Poa elongata Torr. 1821. Spreng. N. Entd. 2: 104, as syn. under *P. Torreyana*.

Glyceria pallida var. **Fernaldii**, var. nov.

Culms very slender, usually geniculate and spreading, 2-4 dm. high, leaves 4-8 cm. long, 2-3 mm. wide, panicles 5-7 cm. long, the fascicled branches lax, flexuous; spikelets 3-5 flowered, 4-5 mm. long; glumes and lemmas obtuse, usually erose at the summit. Flowering later than the species.

Wet places, Me. to Minn.

Type Aroostook Co., Me., *Fernald* 191.

Glyceria septentrionalis, sp. nov.

Culms erect, 1-1.5 m. high, thick and soft; sheaths overlapping, loose, smooth, the upper closed nearly to the summit, ligule 5-6 mm. long, decurrent; blades 1.2-2.5 cm. long, 6-8 mm. wide, nearly smooth, rather obtuse; panicle 2-2.5 dm. long, the subflexuous branches ascending, a spikelet subsessile in each axil; spikelets 8-12-flowered, 1.5-2 cm. long, subsessile or on short pedicels; glumes obtuse, scarious and shining; lemmas 4-4.5 mm. long, faintly 7-nerved, hispidulous, with a shining scarious summit, erose-obtuse, slightly exceeded by the tip of the palea.— In shallow water, N. Eng. to Va. and westw.

Type collected at Guttenberg, N. J. by Wm. M. Van Sickle.

Intermediate between *G. fluitans* (L.) R. Br. and *G. borealis* (Nash) Batchelder, but usually stouter and broader-leaved than either. This has passed as *G. fluitans* (L.) R. Br. but has smaller spikelets and shorter lemmas, and the lemma is hispidulous instead of minutely scabrous. *G. fluitans* occurs along the Gulf of St. Lawrence (Fernald) and near New York City (Nash). Mr. Nash named this form *Panicularia brachyphylla*, noting the difference between that and the common form, but it is identical with *Glyceria fluitans* of Europe.

Bromus latiglumis (Scribn.), comb. nov.

B. ciliatus latiglumis Scribn. 1900. Shear, U. S. Dep. Agric. Div. Agrost. Bul. 23: 40 as syn. under the next.

B. purgans latiglumis Shear. 1900. l. c.

Wooded hills, Pa. to Mont. and Mo.

Bromus incanus (Shear), comb. nov.

B. purgans incanus Shear. 1900. l. c. p. 41.

Wooded hills, Pa. to Va., S. D. and Tex.

Elymus striatus var. **arkansanus** (Scribn. & Ball), comb. nov.

E. arkansanus Scribn. & Ball. 1900. U. S. Dep. Agric. Div. Agrost.

Bul. 24: 45.

Wooded hills, Md. to Ia. and southw.

DEPARTMENT OF AGRICULTURE, Washington, D. C.

SOME MAINE RUBI. THE BLACKBERRIES OF THE KENNEBUNKS AND WELLS,—III.

W. H. BLANCHARD.

IN this concluding paper the *Hispidus* and *Setosus* classes of blackberries are taken up, two new species and one new variety are described, and some of their variations are mentioned under names suggested by the now popular explanations of plant variations.

RUBUS HISPIDUS L. (*R. sempervirens* Bigelow, *R. obovalis* Michx. *R. obovatus* Persoon.) Plants normally perfectly prostrate; stems very slender, small at the base, beset with few to very numerous slender mostly reflexed bristles, some of the smaller generally tipped with small glands; branching freely and tipping vigorously. Leaves on new canes 3-foliate or often in this section 5-foliate, thick, smooth, shining, remaining in favorable places till spring, stipules often large; leaflets broadly obovate with a very short point or none, 1 to 1½ in. long, often 2 in., crenate-dentate, variants often serrate and pointed. Growth on old canes erect, leafy, nearly glabrous; leaves 3-foliate, probably never normally 5-foliate; leaflets thick, broad and rounded; inflorescence slender, more or less racemose; bristles very weak or none, unifoliate leaves few and broad; flowers very variable in size, ⅝ in. to 1 in. broad or sometimes very large; petals generally broad, often very narrow; blossoming and fruiting very late; fruit generally small and sour, but in favorable places often ⅔ in. in diameter and quite edible. Abundant in all parts of this section, dry or moist ground, shade or sun.

The popular impression seems to be that this is a very weak plant

and the herbaria collections mostly are such, but it is often of a very robust nature especially in elevated situations and on bleak shores. These forms seem to make it desirable to have them segregated as a variety.

Var. **major**, n. var. Plants much larger in every way, the stem often densely covered with rather strong bristles, leaves much larger, leaflets on new canes often 3 in. long, frequently pointed and serrate, sometimes narrow; varying in a similar manner on the old canes. Tendency to climb over bushes much greater.

RUBUS SETOSUS Bigelow. (*R. nigricans*, Rydberg.) Plants with the *new canes* generally erect, sometimes decumbent, $1\frac{1}{2}$ to 3 ft. high or often 4 ft.; stems seldom branched, terete or slightly angled, thick at the base and soft, clothed with numerous bristles varying from 200 soft ones to 100 or less strong ones to the inch of stem, the former set at a right angle to the stem and the latter strongly retrorse, more or less of the smaller bristles and hairs bearing small glands at the end. Leaves often large, 4 in. wide, varying from light yellow-green to dark green, not thick but firm, nearly or quite glabrous, a few appressed hairs above and some close pubescence below not rare, mostly 5-foliate, a few of the lower leaves 3-foliate; leaflets oval or rhomboidal, rather cuneate and well pointed; serrate, or serrate-dentate toward the points, the middle one about 3 in. long and $1\frac{3}{4}$ in. wide, the others similar in shape but smaller; petiole and petiolules resembling the stem in bristles and glands, the petiolule of the middle leaflet $\frac{3}{4}$ of an inch long, the side ones shorter and the basal leaflets sessile.

Old canes often decumbent or prostrate, badly killed back especially on large canes, bristles generally much impaired. Second year's growth consisting of leafy erect or upward spreading fruit branches tipped with a racemose often branched inflorescence; branches very variable in length, generally one from each old leaf-axil or several from the upper if badly killed back. Axis seldom straight, weakly armed or merely hispid; leaves 3-foliate or part of them 5-foliate; leaflets pointed at each end, varying from narrow to wide, serrate-dentate; in texture and color much like those on new canes. Unifoliate leaves few none or rarely many. Pedicels and calyx lobes generally hispid often densely so with abundant glanded hairs, or sometimes nearly naked. Flowers appearing very late rather showy, 1 in. broad more or less, petals usually narrow, less than one-half as wide as long. Fruit ripening late globose, small and sour, or often quite large and edible.

Grows everywhere in these towns, the rankest plants in the richest and most favored spots. Farther south and in less exposed places it seems to be most at home in moist situations.

Dr. Rydberg's *R. nigricans* is a synonym for this species and the injection of this name has tended to make confusion. There are

Dr. Rydberg
extant three very meagre specimens sent out by Dr. Bigelow evidently taken from the same plant which he says grew in a swamp in Sudbury, Mass. Dr. Rydberg assumes that these three specimens belong to a species distinct from the great mass of what is known as *R. setosus* which he by this process makes nameless and proceeds to name. The writer in August, 1906, gathered this species from about a dozen stations in Sudbury each different from the others and varying as much or more from each other as they do from Dr. Bigelow's. This species is variable but the variations are not deep. If these slight variations are to be considered as specific there is no end to the species that can be made from them. His specimens and his description will probably satisfy botanists, acquainted with this species in its haunts, that this plant may properly still be known as *R. setosus* Bigelow.

Rubus tardatus, n. sp. Plants slightly glandular, very late in starting and fruiting, decumbent, seldom branched tending to be prostrate and entirely so the second year, tipping vigorously; stems terete, hard, with numerous strong bristle-prickles; leaves quinate, leaflets narrow, dark green, thick, smooth and somewhat leathery. Some of the leaves on the fruit branches often quinate.

New canes. Stems decumbent, tending to be prostrate, seldom branched, brown, hard, 3 to 6 ft. long, tipping vigorously in September; pith slightly pentagonal; proper pubescence on the stem none, a few or numerous red-glanded hairs, commonly present. Prickles varying from spiny ones to strong bristles, $\frac{1}{8}$ in. long, 25 to 30 to the inch of stem, set at random. Leaves large, 5-foliate, large ones 7 in. long by 6 in. wide, thick, leathery, very dark green and perfectly glabrous on the upper surface, pubescence close on the lower surface or wanting, not appreciable to the touch. Leaflets long oval to obovate, outline entire, narrowly cuneate and rather long-pointed, entire at the base, serrate then serrate-dentate above. Petiole and petiolules slender, yellowish, glabrous save a few glanded hairs, well grooved, prickles long, slender, straight; the petiolule of the middle leaflet $\frac{1}{2}$ in. long, the side ones short, and the basal leaflets sessile.

Old canes. Stems prostrate, slightly killed back, prickles somewhat broken. Growth of second year consisting of erect leafy branches or stemlets, 7 in. to 1 foot high, one from each old leaf-axil. Axis nearly straight, glabrous, prickles few and weak. Leaves in color and texture like those on new canes, 3-foliate or often the lower 5-foliate the upper unifoliate; leaflets often 2 in. long, generally narrow, long-cuneate, pointed, singly serrate, the middle one short-stalked. Inflorescence occupying about one-fourth of the axis a simple raceme, 8 to 12 flowers, subtended by small bracts and unifoliate leaves, pedicels and peduncle with numerous glanded hairs. Flowers, appearing first about the 10th of July, about one inch broad, petals one-half as

wide as long, often more than five. Sepals glanded. Fruit globose of 3 to 21 drupelets, the best fruit about $\frac{1}{4}$ in. in diameter, rather sour.

Type stations: The west road from Kennebunk village to West Kennebunk, Maine. Abundant in Wells, Kennebunk and Kennebunkport. Also in North Berwick.

This species is a dewberry and has many of the characters of *R. hispidus* and *R. setosus* though they are not very apparent when casually examined. The texture and color of the leaves, thick and dark green, indicate the former; but they are not evergreen or shiny and are 5-foliate both on the new canes and often also on the old ones, narrow, serrate and pointed as in the latter. In many other respects the characters are similarly mixed, but the hard stem and stout prickles are to be found in neither.

Rubus juncus, n. sp. Plants with a flimsy look, erect the first year, weak, soft-stemmed, often prostrate the second year, glandless except on the inflorescence, prickles weak, leaves thin, 5-foliate, flowering early.

New canes. Stems upright, thick at the base, weak, very soft, dark red, angled, 2 to 3 ft. high, rarely branched, glabrous and glandless, armed with straight, retrorse, slender bristle-prickles $\frac{1}{8}$ in. long, 10 to 20 to the inch of stem, not noticeably in lines. Leaves 5-foliate, flimsy-looking, thin light yellow-green, slightly hairy on the upper surface, considerably pubescent beneath. Leaflets oval, pointed at each end, coarsely, unevenly and doubly serrate-dentate, the middle leaflet broad, nearly rhombic, 3 in. long by 2 in. wide, the side ones similar but narrower and the basal ones quite narrow. Petiole and petiolules very slender, glabrous, grooved, retrorse bristles slender, the petiolule of the middle leaflet $\frac{3}{4}$ in. long, the side ones nearly one-half as long and the basal leaflets sessile.

Old canes. Stems often prostrate, prickles nearly intact or often all wanting. New growth consisting of erect leafy fruit branches 6 in. to 1 foot high, one from each old leaf-axil. Axis glabrous, unarmed, slightly zigzag. Lower leaves 3-foliate, none 5-foliate, resembling those on new canes, the upper ones unifoliate and becoming regularly smaller. Inflorescence occupying about one-fourth of the branch, racemose, covered with many red-glanded hairs, pedicels slender, about 12, subtended by the unifoliate leaves and leaflike bracts. Flowers appearing late in June about $1\frac{1}{8}$ in. broad, petals nearly twice as long as broad, sepals with numerous glanded hairs. Fruit ripe after the middle of August, mostly small, globose; one of the best $\frac{1}{2}$ in. in diameter with 14 drupelets each $\frac{3}{16}$ in. in diameter.

Type stations: Kennebunk depot yard; the direct road from the depot to the shoe-shop; the west road from Kennebunk village to Parsons station and the road to Wells Branch. Abundant in most parts of Kennebunk, Kennebunkport and Wells. Dry ground, open sun and light shade.

This very abundant species has some resemblance to *R. setosus*, enough perhaps to justify placing it in that class. Its red stem nearly naked the second year, flimsy delicate appearance, and early flowering easily distinguish it from that species.

There are in this section many other forms which may be considered as hybrids, mutants, variants or aberrant forms according to the botanist's way of looking at these subjects.

RUBUS HISPIDUS \times *SETOSUS*. These are mostly prostrate or nearly so but they do not like *R. hispidus* branch, tip, nor preserve their leaves through the winter, while they are 5-foliate. Frequent. No two alike.

RUBUS HISPIDUS \times *SEMIERECTUS*. Rare, found in but two or three places.

RUBUS HISPIDUS \times *BIFORMISPINUS*. This was found in but one place and both the species were growing near.

Several other very distinct forms grow here. One is a dwarf "high" blackberry 1 to 2 feet high, remarkably fruitful, growing in the woods. Another belongs to the *Setosus* class, while a third though common fruits so little as to give little chance to study it. Should they prove to be abundant and widespread names will be in order. What the writer regards as the essentials of a species is not merely distinct characters, but the form must be sufficiently abundant and widespread. Sports frequently have sharper characters than any species.

SUPPLEMENTARY NOTES ON THE THREE PRECEDING PAPERS.

During the present season the writer has done a good deal of work on *Rubus* in Rhode Island and in Massachusetts especially in the southeastern part. As some of the plants described in these papers as new species have been found in additional localities, it seems worth while to append the following notes in regard to them:—*Rubus Arundelanus* is abundant on the highway from Marblehead to Swampscott. *R. recurvicaulis* is also abundant in hedges in the neighborhood "Cow Fort" in Marblehead. *R. geophilus* occurs in the northern part of New Bedford and in Plymouth near Manomet. *R. plicatifolius* was found in Burrillville, R. I., and in Palmer and Munson, Mass. *R. arenicolus* was very plenty in pastures in Stoughton and several miles away in Canton. *R. semierectus* occurred abundantly by the road from Westvale in Concord to the Wayside Inn in Sudbury, and in Arlington near the standpipe. *R. Arundelanus* and

R. Jeckylanus belong to the *Frondosus* class. *R. frondosus* seems to deserve notice here.

RUBUS FRONDOSUS Bigelow. This fine species, which was described eighty years ago and which is very abundant about Boston, seems never to have been recognized and there are few herbarium specimens extant. One is a short undeveloped fruit branch in bud sent by Dr. Bigelow to Dr. Torrey in 1823. In the letter accompanying it he characterized it much as in his description published soon after in the second edition of his "Florula Bostoniensis." This letter is preserved at the New York Botanical Garden. A second specimen is a fruit branch in flower collected recently by Mr. W. P. Rich. A third is also a flowering branch collected recently on the Arboretum grounds at Jamaica Plain. These two are preserved in the Arboretum herbarium. The writer had assumed that the Boston botanists had secured the common plants in that section and not till late in August (1906) did he look around there. The species in question was soon found at Cobb Corner in Sharon and near Sharon Heights. Afterwards it was observed at the following stations: Canton, Arlington, Lexington, Medford, Winchester, Stoneham, Belmont, Sudbury, Framingham, Wayland, Clinton, and Milton. It is especially abundant on the hill between Arlington village and Lake Mystic, and in Clinton two miles south of the Wachusett dam in the pastures bordering the east side of the reservoir near the Electric Railroad. It is to be distinguished at sight from the other "high bush" blackberries by its strong, round stem, abundant long recurving branches which touch and lie upon the ground but do not appear to tip, leaves thick, roughly pubescent, leaflets very broad, the middle one only stalked. The old cane preserves its leaves till autumn the fruit ripening early and falling while all the leaves even on the inflorescence remain. The inflorescence is a close cyme with many of the pedicels subtended by broad leaves. No name could be more appropriate. It is occasional in Connecticut and Rhode Island.

RUBUS ALLEGHANIENSIS Porter. (*R. nigrobaccus* Bailey, *R. villosus* Gray's Manual in part.) There are two very common, very characteristic and very different species of high blackberries in the eastern part of the United States. They constitute the bulk of the high blackberries from Maine to New York and south to North Carolina. They encroach very little on each other's territory. One is a northern plant with a delicious spicy flavor to be compared only with the straw-

berry, the plant that Dr. Porter named *R. Alleghaniensis* and Prof. Bailey later named *R. nigrobaccus*. Its range is from northern New England and New York (except at considerable elevations where *R. Canadensis* holds sway, *R. pergratus* in some places occurring also) to the low coast (beginning near Boston) and the adjacent valleys and sand plains. It extends to Northern New Jersey, occurs in spots in Southeastern Pennsylvania, and seems to be frequent in the Pocono Mountains.

The other which is a more southern plant has its northern limit at an elevation of about 200 feet in Connecticut and Rhode Island occupying about one-fourth of Connecticut and one-half of Rhode Island. It follows the coast and sand plains of Massachusetts to Boston. This is *R. Andrewsianus* described by the writer in RHODORA, Jan., 1906. As it occurs in Southington, Connecticut, it bears very poorly but nearer the coast and in Pennsylvania, New Jersey and Virginia it is an abundant bearer. The fruit is large, the drupelets loose and large. The fruit is sweet but not aromatic. Where the two species overlap this is much the earlier and seems to be the parent of most of the cultivated forms.

This information the writer has obtained by personal search, though an examination of several private herbaria and those of Brown University, Yale University, New York Botanical Garden, Philadelphia Academy of Sciences and the National Herbarium at Washington have confirmed it.

It appears that when Dr. Porter found *R. Alleghaniensis* it was so different from what he had called *R. villosus*—the plant now named *R. Andrewsianus* that he published it as a variety and later as a species. Note his description. "It differs from *R. villosus* in being less robust and tall but especially in the character of the fruit which is smaller, scarcely fleshy and possessed of a peculiar spicy flavor from $\frac{1}{3}$ to 1 in. or more in length and often oblong and tapering toward the end in the manner of the little finger." Prof. Bailey would hardly have published *R. nigrobaccus* if he had known the plant Dr. Porter called *R. villosus*. He hesitated, as it was, thinking Dr. Porter's name might be correct. There seems, however, to be no doubt that Dr. Porter was the first to segregate our spicy blackberry, and that its name should be *R. Alleghaniensis*.

WESTMINSTER, VERMONT.

TWELVE ADDITIONS TO THE FLORA OF RHODE ISLAND.

M. L. FERNALD.

WHILE visiting in Providence during the latter part of September I had the pleasure of joining Miss Margaret H. Grant and Professor J. Franklin Collins on visits to the stations of some rare plants of Rhode Island. Though the object of the excursions was primarily to see certain species already known to botanists of the state, many other plants of interest were found, among them twelve species and varieties which a search of local lists and notes fails to show as recognized in the Rhode Island flora.

The first place visited was a patch of swampy woods near Nayatt station in the town of Barrington, where, in the lower areas *Woodwardia virginica* and *W. areolata* (*W. angustifolia*) and *Osmunda cinnamomea* were sufficiently abundant to be cited as characteristic plants, while in the open somewhat drier sandy spots *Rhexia virginica* and *Rhynchospora glomerata* were conspicuous species. In this limited region the following plants apparently unrecorded from the state were found.

ASPIDIUM SIMULATUM Davenport. Abundant in wet woods with *Woodwardia areolata*.

OSMUNDA CINNAMOMEA L., var. *GLANDULOSA* Waters. Several large plants, among more numerous individuals of the typical glabrous form of the species, at the edge of the woods. It is interesting that at both the stations already recorded for this noteworthy variety,—Mr. Waters's original locality near Glen Burnie, in Anne Arundel county, Maryland¹ and Mr. Saunders's station near Clementon, New Jersey²—typical *O. cinnamomea* and the two *Woodwardias* were present, and at Mr. Waters's station *Aspidium simulatum* as well. All these plants occur in the wooded swamp in Barrington.³

HELIANTHUS MOLLIS Lam. Abundant in sandy soil by the roadside in one portion of the swamp. This very distinct Sunflower has

¹ C. E. Waters, Fern Bull. x. 21 (1902).

² C. F. Saunders, Fern Bull. xi. 52 (1903).

³ Mr. W. N. Clute has recently summarized the two previous records of the habitat of *Osmunda cinnamomea*, var. *glandulosa* as "found in dryish situations" (Fern Bull. xiii. 119), although it is not easy to see how such a deduction can be made from the "low sphagnum woods" of Mr. Waters's account or the "low woods" of Mr. Saunders's record.

been found recently at various points along the northern sea-board,—in New Jersey, on Long Island, and in 1903 near Fall River, Massachusetts. At its only recorded New England station, in a field near Fall River, its discoverer, Mr. Sanford¹ considered the plant an introduction, derived from cotton waste. At Barrington, on the other hand, there is nothing except the proximity of a country-road to suggest the introduction of the plant, which is as apparently indigenous as the various ferns, the *Rhexia*, and other coastal plain plants of the region.

BIDENS DISCOIDEA (T. & G.) Britton. This distinctive plant of the coastal plain is probably common in Rhode Island as it is in adjacent Massachusetts and portions of Connecticut. It was found in the Barrington swamp, growing commonly on decaying logs and inundated fallen branches; and it was seen, though less abundantly, in a swamp near Lime Rock in the town of Lincoln.

The second region visited was in the town of Lincoln. Portions of this township are strongly calcareous, and at one point, Lime Rock, several lime quarries have been opened. Within the township we found many characteristic plants of calcareous soils which are already known from Rhode Island, but the following eight species, which it is the purpose here specially to note, are apparently additions to the flora of the state.

PANICUM MINUS Nash. Open gravelly soil in a railroad-cut.

JUNCUS DEBILIS Gray. In J. L. Bennett's "Plants of Rhode Island," this rush is listed as *J. acuminatus*, var. *debilis*; but, when preparing the Preliminary List of New England Juncaceae,² I was unable to verify the report, and saw the species only from Connecticut. *J. debilis* was found in great abundance with *J. Dudleyi*, *Paranassia caroliniana*, and other lime-loving plants at the border of a pond near one of the quarries at Lime Rock. The plants were very luxuriant, often 8 dm. high, with inflorescences 1.5 dm. long. But the most striking feature of the plants is the remarkable development of autumnal flowers, such as is known to me only in specimens collected by Ravenel in 1866 near Aiken, South Carolina. This plant of Ravenel's (Engelm. Herb. Junc. Norm., no. 61) Engelm. characterized as an autumnal form "in which the heads by

¹ S. N. F. Sanford, RHODORA, vi. 88 (1904).

² RHODORA, vi. 34-41 (1904).

renewed vegetation of their axis degenerate into spikes.”¹ Normal *J. debilis* matures in early summer and has 2 to 7 flowers in a head. The late-flowering form at Lime Rock, like the Ravenel plant, has the heads mostly prolonged into many-flowered spikes, the longest 8 mm. long.

POLYGONUM CRISTATUM Engelm. & Gray. Abundant on a gravelly bank, Lincoln. Formerly unknown east of Connecticut.

AGRIMONIA MOLLIS (T. & G.) Britton. Found at various spots in Lincoln, in rocky (calcareous) open woods and thickets. Previously unknown east of Connecticut, where it is rare. The only herbarium-label which I find recording the lithological character of the habitat of *A. mollis* is one of Mr. A. A. Heller's, stating that in Lancaster County, Pennsylvania, the plant occurs in limestone, a soil-preference which it clearly follows in Rhode Island.

AMPHICARPAEA PITCHERI T. & G. Very abundant and climbing extensively to the height of eight or ten feet over shrubs, in alluvial woods, near a lime outcrop at Lime Rock. The vines form a close tangle covering perhaps an acre of ground, and when found were in abundant and very typical fruit. This plant, which is generally known from western New York to Missouri, Louisiana, and Texas, is very clearly a member of the New England flora. Twice before it has been reported,—from Winchester and Revere, Massachusetts, and from near Bridgeport, Connecticut; but in his discussion of the New England Leguminosae in 1900, Judge J. R. Churchill² was inclined to discredit the status of the species in New England. The Rhode Island plant is quite like material from the Mississippi Basin, the margins of the pods being covered with stiff mostly retrorse hairs.

GERARDIA PARVIFOLIA Chapm. (*G. Skinneriana* of many authors, not Wood. *G. decemloba* Greene).³ This beautiful coastal plain species is not cited from Rhode Island by Judge Churchill in his Preliminary List of New England *Scrophulariaceae*.⁴ It occurs with other pine-

¹ Engelm., Trans. St. Louis Acad. Sci. ii. 466 (1868).

² RHODORA, ii. 91 (1900).—

³ The plant of sandy soils near the coast, from Massachusetts to Florida and Louisiana, should be called *G. parvifolia* Chapm., for it is clearly that species and not the plant described by Wood as *G. Skinneriana*, with which it has been confused. The latter species is a plant of the interior, from Ontario to Minnesota, Tennessee and Missouri, with the rose-colored corolla-lobes rounded or merely emarginate at tip and the capsule globose; while the coastal plant, *G. parvifolia*, has the lobes of the bright-pink corolla obcordate and the capsule oblong-ovoid.

⁴ RHODORA, vii. 33–38 (1905).

barren plants on a sandy plain between Lime Rock and the Blackstone River.

BIDENS VULGATA Greene. Fully as common in the calcareous region as the ordinarily more abundant *B. frondosa*.

BIDENS COMOSA (Gray) Wiegand. In limy soil, near "Dexter lime-rock." Already known locally in Massachusetts and Connecticut.

GRAY HERBARIUM.

RECORDS OF THE CONNECTICUT BOTANICAL SOCIETY,— II.

E. B. HARGER, Cor. Secr.

THE CONNECTICUT BOTANICAL SOCIETY held three excursions during the summer of 1906.

The first excursion was to the trap and sandstone region of the valley of the Pomperang River, which is interesting as being a detached area of a few square miles of a geological formation otherwise found in this state only in the Connecticut River Valley. After leaving the station at Pomperang Valley about 9 A. M. the party first stopped at a field near by which was filled with *Pentstemon pallidus* Small., a species here quite different in aspect and habit from *P. hirsutus* (L.) Willd., which is found not far distant. At the next halt, near the Pomperang River, Messrs. Weatherby and Harger found *Galium verum* L. and *Parietaria Pennsylvanica* Muhl. The party then proceeded to the only known New England station for *Phlox pilosa* L. (see RHODORA 1: 76), which was found to be in full bloom and apparently increasing. A quantity of *Convolvulus spithameus* L. was found near by. Most of the party then walked to the Housatonic River, returning from the station at Sandy Hook; but on account of the great heat and an impending shower little more collecting was done.

The second excursion, with Mr. H. S. Clark for guide, was to the Reservoir Parks, west of Hartford in the town of Farmington, and was held Aug. 22nd. Showers in the morning reduced the attendance but those who went saw, among other things, *Rosa setigera* Michx., *Aster infirmus* Michx. and *Solidago squarrosa* Muhl.; while

Mr. Bissell discovered *Eleocharis Engelmanni* Steud., and the writer, *Monarda fistulosa* L.

The third excursion on Sept. 12th was to the shore region near South Norwalk under the guidance of Mr. C. H. Bissell and Mr. G. P. Ells. At Roton Point Mr. Bissell showed the station for *Phaseolus perennis* L. noted in RHODORA 4: 13 and, in the vicinity, *Baccharis halimifolia* L., *Arctostaphylos Uva-ursi* (L.) Spreng., *Setaria versicolor* Bickn. and *Elymus robustus* Scribn. & Sm. Here the proceedings were interrupted by a shower but the time was utilized by eating lunch under the shelter of a friendly veranda overlooking Long Island Sound and the Norwalk Islands. After the rain the party proceeded toward South Norwalk visiting the most northeasterly known station for the sweet-gum tree and stations for *Lophanthus nepetoides* (L.) Benth. and *Solidago rigida* L.

OXFORD, CONNECTICUT.

REGENERATION IN THE LEAF OF ARISTOLOCHIA SIPHO.—In RHODORA 5: 38 (1903) I described the curious lamellar outgrowths on the under surface of a leaf of *Aristolochia Sipho*, first observed by Miss Katharine P. Loring, of Pride's Crossing, Massachusetts. The leaf was believed to have been injured and the lamellae were thought to be incidental to the healing of the wounds. Perrot discovered similar structures upon the same species in France.

Miss Loring has now placed the origin of the extraordinary growths beyond dispute by careful experiment. Early in the present season she selected a number of young leaves and treated them by folding and pinching the blades in various directions. Most of the injuries thus made were healed, and in connection with a good many the lamellae arose in accordance with expectation. Folds generally parallel with the principal veins were more successful in stimulating the desired growth than those made transversely to the veins. Some leaves were found which had numerous small areas of excrescence, the effect, as Miss Loring believed, of accidental abrasion, since these leaves were situated in surroundings favorable to such an explanation. At any rate, the experiment proves that the accessory lamellae may be occasioned by injury. It seems to me likely that insect bites would have the same effect, and that the phenomenon may be expected to recur under natural conditions.—R. G. LEAVITT, Ames Botanical Laboratory, North Easton, Massachusetts.

POTAMOGETON SPATHAEFORMIS A PROBABLE HYBRID IN MYSTIC POND.—The very local plant which was discovered in 1850 by the late Edward Tuckerman in Mystic Pond, Medford, Massachusetts, and called by him *Potamogeton spathaeformis* has never been found elsewhere in America, and is not known to fruit. In Cambridgeshire, England, however, it is known to Mr. Alfred Fryer to fruit, although not abundantly, and Mr. Fryer has maintained that it is a hybrid between *P. heterophyllus* and *P. angustifolius*. The late Dr. Thomas Morong, while admitting the possibility that Mr. Fryer's interpretation is correct, said: "but a weighty argument against this view is the fact that neither of the supposed parents occurs in Mystic Pond, and that it should be produced in localities separated by the Atlantic ocean."¹ In view of Dr. Morong's positive statement, therefore, it is important to record the fact that in the Gray Herbarium there is a sheet of very characteristic *P. angustifolius* collected by the late Wm. Boott in "Mystic Pond, August 26," (presumably in the 60's); and that in both the Gray Herbarium and the herbarium of the New England Botanical Club there are characteristic specimens of *P. heterophyllus* collected in Mystic Pond by Messrs. E. & C. E. Faxon. There is, then, no reason, as maintained by Dr. Morong, why *P. spathaeformis* should not have originated by the hybridizing of *P. angustifolius* and *P. heterophyllus* in Mystic Pond as well as in Cambridgeshire, England.—M. L. FERNALD, Gray Herbarium.

¹Morong, Mem. Torr. Cl. iii. no. 2, 27 (1893).

Vol. 8, no. 94, including pages 189 to 204, was issued 25 October, 1906.

BOTANICAL PUBLICATIONS

SYNOPTICAL FLORA OF NORTH AMERICA, by A. GRAY and others. Vol. I. Fascicles 1 and 2. A critical treatment of forty-five families of polypetalæ (*Ranunculaceæ* to *Polygalaceæ*) 1895-1897. \$5.20.—GRAY HERBARIUM of Harvard University, Cambridge, Mass.

FLORA OF MT. DESERT ISLAND, MAINE, by EDWARD L. RAND and JOHN H. REDFIELD. With a Geological Introduction by WILLIAM MORRIS DAVIS. 1894. And a new map of the Island. 1901. Price \$2.00, post free. A few copies only remain for sale.—Address EDWARD L. RAND, 53 State Street, Boston, Mass.

NEW ENGLAND WILD FLOWERS AND THEIR SEASONS, by WILLIAM WHITMAN BAILEY. Price 75 cents net.—PRESTON & ROUNDS Co., Providence, R. I.

THE FLOWER-LOVER'S MAGAZINE

If you want to know about our wildflowers send for **THE AMERICAN BOTANIST** which is edited especially for the flower-lover. It is not a technical journal but abounds in quaint, curious and otherwise interesting items about the wildflowers. Especially valuable in nature-study work. Send for a sample copy to

WILLARD N. CLUTE & Co., Publishers,
Binghamton, N. Y.

GENERAL ADVERTISEMENTS.

HOME GROWN LILIES.

Fresh from Beds. Wild Flowers, Hardy plants of all kinds.
Send for catalogue.

F. H. HORSFORD, Charlotte, Vt.

CONCORD NURSERIES, Concord, Massachusetts. Established on Minot Pratt's Homestead by his son, F. G. PRATT. Over 300 species grown, including *Rhodora*, pink and white, *Andromedas*, *Cornels*, *Viburnums*, *Kalmias*, *Ivy*, *Myrica*, *Benzoin*, *Hamamelis*. E. Mass. plants collected. Catalogue.

CAMBRIDGE BOTANICAL SUPPLY COMPANY, WAVERLEY, MASS.

BOTANICAL SUPPLIES OF EVERY DESCRIPTION. SAMPLES of *Mounting Papers*, *Genus Covers* and *Driers* mailed on request. **POCKET LENSES** from \$1.25 to \$5.50. Ask for the New Catalogue, No. 37.

PHYSIOLOGICAL APPARATUS, MICROSCOPIC MOUNTS, LANTERN SLIDES.
Intelligent Service. Standard Material. Immediate Shipment.

A Model Botanical Text-Book

| | |
|---|--------|
| LEAVITT'S OUTLINES OF BOTANY, | \$1.00 |
| With Gray's Field, Forest and Garden Flora, . . . | 1.80 |
| With Gray's Manual of Botany, | 2.25 |

For the High School Laboratory and Class Room.

By ROBERT GREENLEAF LEAVITT, A. M., of the Ames Botanical Laboratory. Prepared at the request of the Botanical Department of Harvard University.

THE practical exercises and experiments have been so chosen that they may be performed by schools with even simple apparatus. The instructions for laboratory study are placed in divisions by themselves, preceding the related chapters of descriptive text. The book combines the best features of the newest methods with that lucidity and definiteness which have given Dr. Gray's text-books their extraordinary success. It pays special attention to ecology, but morphology and physiology are also fully treated. The illustrations number 384, and have been drawn with great care and accuracy. The appendix contains valuable suggestions for the teacher, and the index is very complete.

American Book Company

New York

Cincinnati

Chicago

Boston

PSYCHE

A JOURNAL OF ENTOMOLOGY

Established in 1874

Publishes technical papers by recognized authorities, and popular articles characterized by high scientific accuracy, giving particular attention to experimental work. A synopsis of current entomological literature appears in each number. Much space is given to problems connected with the insect fauna of New England.

Six Numbers a year:—February, April, June, August, October, December. Annual subscription One Dollar.

CAMBRIDGE ENTOMOLOGICAL CLUB, 234 Berkeley St., Boston, U. S. A.

THE PLANT WORLD,

An Illustrated Monthly Magazine of Popular Botany.

\$1.00 a year.

Established 1897

12 numbers

Official Organ of the Wild Flower Preservation Society of America. If you are interested in Botany the PLANT WORLD will interest you. If you are a teacher of Botany, the PLANT WORLD will help you by keeping you in touch with modern botanical thought.

Edited by Francis E. Lloyd

Teachers College, Columbia University,

Send two cent stamp for sample copy.

New York City.